Aviation Week

Including Space Technology

5 Cent

A McGraw-Hill Publication

November 2, 1959

Piper Unveils Aztec as Spur

Aztec as Spur To 1960 Sales

Igor Sikorsky Tests S-60 Pod Concept



CL-44 Freighter Aims at Low-Cost Operation



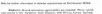


Still Another Hydro-Aire Product for the Aircraft and Missile Industries

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new high-performance

M-430, 440 Series typrly capabilities in meeting special design requirements

These 400-cycle, 3-phase, 115/200 v s.c motors were developed originally in conquestion of Authoria baya piscel securiors for abordy main applications. Bocase of their melli professiones the applications the case of the three updatable—both is addition to our line of special motors and as complete of Authoria conglicities in their papable from all applications.





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under these conditions because it pefects light instead of chearbles dark background miles on horse. (The new sate reseven beavier and faster) Tires can always take a good, fron grip

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THE RUNWAYS WE

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Thermal Stress-Relieving of Alloy Steels

In the production of alloy steel bars timom results can be expected. Two

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example) can be whally or selective relieving is impossible. Howgiven overall relief or selective reflect.

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WITH GOOD EARRICATION PROPERTIES

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November 2, 1959

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AVALUTON WEEK, November 2, 1929

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EDITORIAL

Despite the control proof inspect of the Soviet rocket. shot to the moon and their more sophisticited linear As we have written many times before in the past few data't think there was new real competitive problem in Spatrak I went rate orbst, these has been no significant chars of Soviet space pataeoring achievements has indi-

the admirtedly difficult task of actives the U.S. programs modest record of achiev count to contast to the spectace

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Space Technology Laboratories' new corporate speckel represents a bright history in a spinulating age, * STL has termidal the over-all visions enringering and technical direction for the Air Force Bullinia Mindle Program since it was assisted the highest notional trively in sage. Five were of accelerated effort tendenal edic advances in science and technology, and propelled the art of ministery through three distinct generations of progress, SEL contributed technical leadership to the science/programmet/industry team which has built this solid, expandable foundation for future advances in space, and it dealy adding new strength to our national security, is In addition to its major monarcount function, STL also conducts advanced state troke experiments for the Air Porce at the direction of such assessing at NASA and ANNA & To those scientists and comparer: a mith contribities in proteching, electronics, thermodynamics, aerodynamics, structures, extraphysics, computer | technology, and other related fields and



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Snail's Pace in Space

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resistant accords working in the space research areas agree coborts will need for more focal political and nebbic support than they have received in the first year of them



Airborne components that guarantee circuit reliability

In the airborne electronics field—place, missile or space program—the parameteric requirements are reliability, densitivity, upit weight and small size. Westatybuste continues these product characters which the product of the product characters of the year of anopticule surror for a greater wantly of electronic completed surror for a greater wantly of electronic computers and subsectables than any other manufacturer.

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INDUSTRY OBSERVER

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Washington Roundup -

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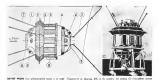
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Space Technology

Soviet Probe Pioneers New Techniques Complex flight tactics employed as Soviet vehicle photographs moon's far side, transmits results.

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Azzn Ordnigge Missle Commind AVARION WIEK, November 2, 1959

Soviets Claim Record

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AVIATION WEEK, Namember 2, 1959

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NASA Wants Fiscal 1960 Fund Boost Corners for a supplemental Final 1963 representation. Invested propositioning barbos development costs and the fact that Congress out \$29.725 sollion from the

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Defense Group Evaluates Zeus Potential

By Philip I. Klass Washington-Octors Department

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AVIATION WEEK artist's conception shows Nike Zens two-days wands configuration. Ness core is detectable

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Martin Proposes ALBM Satellite Monitor

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Liquid Engines Upgrade Sparrow, Bullpup By Michael Volice sorket monthlysu-flow becomingly over and sales, or the solid mater it

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SOLIO PROPELLANT GAS GENERATING COMBUSTION

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AXIATION WEIK, Neverber 2, 1892

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Deflection Plate Tested for Mercury

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France to Develop IRBM With U.S. Aid

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News Digest

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Free Johnson Committee Committee

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ANSADON WEEK, November 2, 1929

AIR TRANSPORT IATA Airlines Gird for Passenger Battle

Fringe benefits designed to lure truffic may be first

result of international open-rate fare structure. By L. L. Dety

the International Air Transport Assa traffic conference (AW Oct 19, p. 38).

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AVIATION WEEK November 2, 1959

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CAB Ruling in Viscount Accident

Disputed by Capital, Dispatchers By Robert H. Cook worther conditions, the advasors should

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CMFs criticism of Guesta's descent

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afterward, the night wing separated



airlines in the U.S. is supplied

by Sinclair. There is no better proof



of reliability.

Aircraft Oils 900 Fifth Aven Hear York 20, H. Y.



CAB's Expanded Mail Program Tentatively Approved by American

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AXIATION WEEK, Neverber 2, 1939

Delta Pilots Dispute Seniority Listings Weskinston, Mossters prostored

among Dida Air Layer' pilots over the

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line's "System Route Consulting,

PanAm Objects To Transpacific Proposal

ROLLS-ROYCE BY-PASS JETS

are now flying in Boeing 707-420 and Douglas DC-8 let airliners

The by-bass or turbo-fan principle proped by the Contray is note generally accented as the correct formula for all high speed subsonic jet transports.



Convey by cass jets for civil use will enter service in 1960 at 17,500 lb, guaranteed minimum thrust. The Civil Conway is being developed to powers over 20,000 lb. thrust with improved fuel consumption.

The Ris. 141 family of by-pass jets (10,000 fb. to 17,500 lb. thrust) have been downed to give the best possible operating economics for set transport average. The RB.141 of the Sud-Aviation Caravelle and the RB,163 of 10 100 lb, threat has been chosen to

power the Airco DH.121.





RY_PASS_JETS

ROLLS-ROYCE OF CANADA LIMITED, BOX 7409, ST. LAURENT, MONTREAL 9, P. Q.

ROLLS-ROYCE LIMITED, DERRY, ENGLAND ADDRESS - MOTOR CARS - MINES AND ANALYSIS CARROLL A PROPER MATTER A PROPERTY MATTER AS A PROP

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Maintenance Improvement

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Most senors mechanical trouble or

AXIATION WEEK, November 2, 1557

Engine Performance



New Bosing 707-1208 airplanes will be equipped with SUN-DYNE water injection pumps built to operate for 1500 hours hetween overhauls.

High reliability and long life result from the SUNDYNE principle which features negligible temperature rise during dry oper-

This pump is readily adaptable to meet the water injection reent day commercial let Fifty-carlet attends to service *DGS Tollets on this service have

beed They smoked moves the om-

*DC4 Washhald cacks and balance risten were brought on by a faulty. Broad cleaning to great any meloni on . Became 757 and DCS. Accounts loads on the for wondrheld and the op- middelth of the Shorals Sol befrom the engines resulted in minor stating temperature reduced

on and finite trate. Madelectures in confuse of the skin in several aft Los Angeles Airvays ners "starrentar" according to Lock . Booker 707, Levelver water down

Plane S.61 Service



Sikorsky Envisions Future S-60 Passenger Pod

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AVIATION WEIK, November 2, 1929

HOT GAS SYSTEM COMPONENTS NOW

AVAII ARI F FROM

CHANOLER

As he conducts of extensive development work in

The products shown and described were develoned for use with high-pressure hot may reperated

he considered only representative Design modifications can readily be made to adapt these devices

heretofore available, CECO will be hency to affeed components, or for date on CECO's hot was servo



This seaction chamber, containing a suitable catalant bed and injection nomic, w used to generate hot gus. When hydranine from a presentized source is icel reaction which continues until the feel supply in



PERO-SUSPENDED, CLOSED

is correctly confishing a variety of sizes to accommo-Appropriation specifications

Operating temperature (embied) to 3,000 s. Flow capacity Octol gas flow? Ct lb /see Opprisoned leakests 10% of total flow

CHANDLER EVANS CORPORATION

175" x 275" x 178" See . With edditional torous-motor cooling.

gir (0.1500°F, 2000 am

STGULATING VALVE

This valve may be described as a sprine-loaded, spoolprogressively closes off as the catlet pressure increases.

Plane (hyperanous) ,002 to 02 to 12 Weight 31 h 508 175" O B. x \$400" Limited changes in regulated passeure can readily be accomplished by means of a simple adjustment nowne. Reporter changes in recolated pressures or in flow

Since until-critics areas of serve valves cannot telerate lands. CEICO found it necessary to develop the resoral It operates as follows: but was flown into an annulus between the filter element rgal housing, then diffuse the filter country for several suggests, with average

Weight EE to

2 per () 1000 pel 1.3E O.D." a 5.00"

CHANDLER EVANS CORPORATION







HOT GAS PRACTION CHAMPE FOR LABORATORY USE

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CHANDLER EVANS COPPORATION

American Predicts Reasonable Gain In Airfreight, But No 'Bonanza'

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Risk in Mercers Marrow me a meteodic alternative

Delay of two or those years, which could be expected now, exerte the rate

American's Euroines Rise

Continental Reports

Revenue Increase

Airline Aid Pact Extended by CAB

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VIEWPOINT The Spoken Word-Part II

Our air traffic exerted anters will continue, for raine years to come. to

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COCKPIT

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Obsolete Communications System

AIRLINE OBSERVER

► Watch for the surface sudjector to occur its attack on a White House grading and by four cents for get fact. Shelved during the last sessors of Commons Arthur moherner on the horotter motte which could be reshes for United \$8.8 meltion for American, and \$7.6 meltion for Treas

P.U. S. sadines also are searching for a meme to combat any further boost in who underwrite a large percentage of the policies held by American corriers. while several arrivers complained that rates for set aircraft were processorable. promises charged was suitified in view of relatively hency set losses flow far and the incounting cost of portful lours. The investors say that let claims

*Plaippure Aidnes will make a bul next year for biliteral rights to serve all vertex between the Philippens Islands and the U.S. supplied that on now served by Pas American and Northwest on their Pacific restor.

Polots Assa. Flield Engenteen International Assa. Air Line Diseasehre. Am., Tuesser Westers Union and Brotherhood of Reflyer Certs (AW

berg by the Hotel and Restaurat Economic and Bertenden Interactional Union. Laure percentage of this major's 490,000 membership is employed by string food departments and extering services.

equipment wit can approximately \$500,000. The fitting this is remaind an additional \$7 million for \$2 is not of \$218.000 rach. * Worth for a second revision by the Carl Associative Board of its second on the TWA Martin 464 accident which occurred at Albaconsume. New Mexico, on Feb. 19, 1955. First procedurest of the initial respect was inseed.

SHORTLINES

►Bennen Air Lines reports a 46-655 September over the sine month of 1978 The local corner attributes the excelent exces in traffic to its Exceloid 8.17 hadageon tropposts. The compr

Cental Aldines is adding Washing-Chicago since Aug. 2. Under the plan. can call the norms County office reembediation and debalation other,

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MacRobotton Miller Afrikas of Vestralia supects to take delivery of a Northwest Aidless is now pecualiza-

Portland Introntinual Airport in

► Western Air Lines often a 25-ccst



Weather proof silicone rubber seals last longer than organic rubber...reduce costs

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satisfactory.



AERONAUTICAL ENGINEERING

CL-44D Seeks to Tap All-Cargo Market By Robert 1, Specifeld

Montreal-Turbered to the garm may and dispressive or IP to int both international read domestic. Beaut price of complete recent in the parent full service of Complete \$1,090,000 not including \$2.77 dark thre will be twated up to \$50 of \$00.







AMAJION WEEK, November 2, 1929



How Liquid Hydrogen

These new high speed turbo-expenders hold the lary to producing Luquid Hydroges on a torsing-basis. They make it products to lought his ultrastic hold of low oast for the first time. Specially designed by Air Products for the Air Force Tennage Lugard Hydrogen Fashity at West. Palm Beach, Finnin, Lety are the latest examples of low Air Products experience and skill in evaporation apply laboratory technology on a midmatural naction times uponfer technology on an inflantarial naction times uponfer

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Air Products





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GENERAL SALVERMAN OF THE CHARLES OF THE CONTROL OF



SMALLER AND LIGHTER than comparable turbulets.

resule quaterner, the NG-7, delivers 2450 fts SHORT AND COMPACT, with a better then 7 to 1 thrust-to-weight ratio and low SPC, the JSS makes PERFORMANCE PROVEN, the 385 has accumulated more than 6000 test hours. On North American's

SPC sucception At Wright Air Development Conthe MAYs less termerature stortion and accelerating

THISE EXAMPLES one typical of the running Sacht The J85 has been developed under USAF conteact

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INFRARED DETECTION

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UNCOUNCE COST BY MAKETT

AVION DIVISION O.C.F. MINISTERN INCOMPANATOR

This is the one computer you can take with you Announcing the Donner 3500

SMALLEST ANALOG COMPUTER EVER MADE HTS YOUR LAP YOUR DESK YOUR BENCH! can be solved and demonstrated. Was can other serve-Until now, the enviseer, teacher, or scientist who

loss in time. Alternately, use it in the lab as a preautward circation. He could take his problem or cision power appely, a low-frequency oscillator, wave class to a competing center and well his turn or. after a theroughly cumbersome updertaking, set up Prices for the Donner 3500 complete and ready to work including the "extras" mage from \$1200 to 51/00. This includes potentiometers and a nominal A complete commuter is only 515° birth, 19° wide, and 16% down. By signoly proposing a few acress. the problem board tilts up for rack mounting. auco in a tiny package. Up to three computers can be above traveler for 10 70 or 30 applifor appliers WANT MORE INFORMATION? Your nearby Donner engineering representative will

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3500. It's but that easy. Most dynamic equations

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191A), SkiP COST for Flying Operations 6 WATEN WEEK Navember 2, 1929

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ER SCIENTIFIC CONCORD, CALIFORNIA

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Canadair CL-44D-4 Performance

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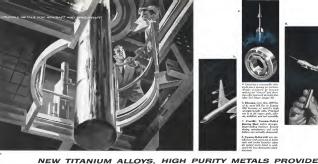




the first shoot early in 1957, it has had more than forty successful burnchyear, at a variety of lobs from re-ontry vehicle testing at ICBM ranges to placing setallities in orbit. Initial planning for THOR included volume production tooling, ground handling equipment and operational systems. This believe Drumber approach, made the most IRRM everlable in ministry in become the workhorse of the space one Doubles is now stelong custified engineers and scientists for new projects with even more eaciding projects. Some Immediate openings are described on the febria page Bobert Johnson, Missile and Space Systems Chief Engineer, reviews

results of a THOR-boosted 5000 mile flight with DOUG

MISSES STATEMS IS SPACE STREETING BULLYAFF AND DAVID IS STEPRING CARGO TAMOSPORTS IN ARCOMO INCOMO HANDUNG FOURSET



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IMPROVED PROPERTIES FOR MISSILE DESIGNERS

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CRUCIBLE STEEL COMPANY OF AMERICA

for and alt loads scales take over of parate on a 20 on god two nathrond on a terrorial hadding consisting of therenal loads under provide for 31 000 fs. tectoron securing and distributing docks, load-Constant in helding a full-ups force

Isolated Base System

AMATION WEEK Navember 2, 1989

THOR* MISSILE CHEMICAL COATING RINSHED-MASON

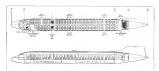
The Rinched-Moson obesided costing covering the THOR* missile will tolerate temperatures unwards of \$50°F, at the rate of 10°F. per second temperature rise. Air dries to a high gloss in less than 30 minutes. Excellent salt-spray and humidity resistance. Available in Weits (Q51W077), Blue (Q51B813), Red (Q51R606), and Black (QSIK886). Rinshed-Mason maintains extensive research and production facilities for special finishes and

chemical contings for alreraft, minilas, and space craft. RINSHED-MASON COMPANY, INC. mair 10. Michigan . Anaham, California . Windoor, Ont., Canada



SPACE ELECTRONICS CORPORATION

COLUMN CONTRACT CONTRACT IN



INTERNATIONAL corrective parameterize region of the Catalon CL+H assumption 72 sections. Spellers-knoped slots on the appear

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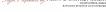
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POWER THE KEVI







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GENERAL ELECTRIC'S DEFENSE ELECTRONICS DIVISION Organized for a Full Range of Systems Requirements

of the Company's top systems management and technical tolants, DSD is GE's.





DATA PROCESSING AND DISPLAY EQUIPMENT





enged in space technology, MBVD developed opera-



NEW HIGH IN TENSION BOLT PERFORMANCE! 260,000 psi-with over twice the fatigue life of an MS20004

Tetroduction of the NWB Of-inworld's strengest built, not only in

A tangible result of SPS's inter-

The EWB 25 is use of a series of



AIRCRAFT/MISSILE Division JINKINTOWN 3, PENNA,

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Canadair CL-44D-4 Specifications

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Underfors compartment values: 1,011 on H.

See NACA 25017
kried series, see NACA 2611 tandsteel
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GEROTOR aircraft pumps



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W. H. NICHOLS CO.

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SPS WESTERN, SANTA ANA, CAUF,

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He's Spotting Premature Removals Cracks, finer than hairlines, insert excefully . . . using a 20 power binocular microscope.

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COMPUTATION - PRIMED FOR THE TEAM PROGRA

BURROUGHS CORPORATION IS UNIQUELY PREPARED TO CAPTAIN OR CREW THE CONTRACT TO PROGRAM, ITS MAJOR CONCERNS ARE COMPUTATION-AND COOPERATION, THE FORMER RANGII FROM BASIC RESEARCH AND SYSTEMS ENGINEERING THROUGH PRODUCTION TO FIELD SERVICE; TO WITH THE BENEFIT OF BOTH, THE TEAM APPROACH TO ANY SPACE AGE PROBLEM IS SMOOTHS STRONGER AND ABOVE ALL SUCCESSELE



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size 8's that do the work of 10's ... 15's with 100,000 rad/sec? acceleration ... 11's and 18's with inertia or adjustable wincity damp-

ing. Extract your solution from an infinitude of erroway servametors.

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WHAT'S NEW

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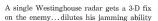












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HEADIN

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WAR HEAD



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ANSATION WEEK, November 2, 1959

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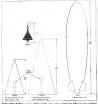
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Effectiveness Criteria



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FINANCIAL

Writeoffs, R&D Costs Cut Profit Margin

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Financial Briefs

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systems match the needs of the majority of manned and surranged weapon systems. tionic systems can be packaged in similar tem is thus complete and readily mobile. ough Support System, these new automatic push. This is the reliable way to find fanit

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Feel flow rates at presence up to Some models are example of speeds

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BUSINESS FLYING





Piper Unveils Aztec as 1960 Sales Spur Williamont Paulliothing the Sentence Courses due to militature, ment a for additional design to bould which the Lock Olmon, Pr., common Some 550 U.S. and foreign reprecentrines attended the conserves on . Sales organisation. Some 50 don't-

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THREE-YIEW descript of Arms. PA21

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59,345, Ph.18 (Seper Call) 95, 56,145. Persence transer (AW Oct. 26, p. 37)
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Water to. Mr. Stanley Greenfield, Chief \$633 Ganner Avenue, Carpers Park, Colf.

ROCKETDYNE #≥

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TRUE ARSPEED-shineds cheek for Auton. AVAILON WEIS Neurober 2, 1850



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In addition, 190 technics were sold by ton, Placess, Ariz., add 57 are ze- Mr. Jean Accraft & Arec enfe in 1959, including 12 Aparle and N. Y. exported 211 aresult Wigner Airena, Norwood, Men.

and he's "just getting started." Bakes.

Both indicated that "so 15 months of its distributors which had exceeded face 1979 quote. In addition, achieve-

Taker Accords Sales, A. W. Whether AVIATION WEST Househor 2, 1989.

Dence Salar Hune Senier, Inc. Letubera, V. L. Kon-Mar Armel.



PIPER ACTEC most bus contrained reflected professions and with reference VIII town solbte for contact with ATC, plus shouldy VHP for contact with outsileasupe distance.

Piper Aztec Performance Top spins. Optimizes critic spicid (75%) power at 7,000 ft) 205 mg/s. Critic spiced (05%) power at 5,000 ft) 200 mg/s. Strike speed 62 mph Takent can 750 m Third on (our 50 ft hates) Landing (over 52 ft begies) .1.369 ft 1,075 etc. or 1,300 stat. ex-(min. of 45%) power at \$3,000 ft).

Piper states that comparative fight. Agebore does whitee motions fouch as

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Aztec Specifications

Cobin Heat

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Production Engineers ... here are opportunities to ioin a group responsible for production of advanced space controls

tion . . . these are the work areas of Honeywell Aero, a division of



1433 Serves RVd, N.E. Allers cools 13, Alements To evolve professional consetession in other Honorocal parentiese



These R&D Projects for Future Decades in Space typify Lockheed's vast program of Air/Space Science

■ New reagences under development at Lockboor's California Division are placated to solve America's future exploration receives into more. The new Gabriel mountains is further evidence of Lookbrod's determination to support and supplement its already extensive research and development activities.

As a vessit of this markerly remoded negotiars there is urgest used for engineering and selectific newscared with high-level nechainst wills. Lone a leader in advancing the senser of fight Lockbood is placing vast resources and accumulated research: manned arresaft of advanced desire. missiles and spacecraft. Some of these important pesesych and development programs are:

High Affiliade Flight Vehicles with owned corner

Services Mannert Space Vehicles comble of honorsome while or orbit about the earth intrared System some mantles and high-speed atrought Soler Radiation strains. Vertical Take-Off and Landon and "sir recovery" vehicles Heliconters, Supersonic

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Worse Bruse D. Wood, Technical Director, Days. 558.

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I am endoing my remote for your con-

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Net Pellin, Fidd Service Message

Field Service Engineers ... here are opportunities to work in areas of

flight control and inertial quidance systems

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Openings in the following areas: . Right Street Broads General right is RECESSARIES STREETS With with . talk tribut BUMOS Experience with . BUTBADE BUILD Electromechanical a CONTROL SHAPPEN Shock to profit printed

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